NASA NEWS

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Sept. 15, 2004

RELEASE: 04-87AR

NASA DEVELOPS NEW TOOL FOR AIRLINE ACCIDENT PREVENTION

A 'tool' created by NASA scientists to alert airline analysts to potential, unanticipated problems and to enhance safety and reliability in the industry is available for licensing.

Scientists at NASA Ames Research Center, located in California's Silicon Valley, developed a 'Morning Report' of atypical flights. It automatically identifies statistically extreme flights to airline flight operations quality assurance (FOQA) analysts. The new software may help analysts identify the precursors of incidents or accidents.

"The Morning Report offers a promising method for identifying unanticipated problems and opportunities in flight data recorded by commercial aircraft," said Thomas Chidester, Aviation Performance Measuring System manager at NASA Ames. "The Morning Report implements concepts from flight science and statistics into practical applications usable in industry," he added.

"Our goal is to focus the limited time of experts on analyzing the most operationally significant events, while broadening and deepening their analytical capabilities," Chidester said. "The challenge is finding and understanding key information from the mass of data generated by aircraft and collected by data recorders," he said.

Only a small portion of the data generated by flights is analyzed through the identification of situations where aircraft operate outside pre-defined ranges. The Morning Report tool may be able to interpret more aircraft data for improved analysis. Unlocking information contained in data sets has the potential to enhance safety, reliability and the economics of flight operations.

The Morning Report tool has attracted the attention of industry-leading providers of flight data analysis software looking to improve their analysis tools. SAGEM Avionics of Grand Prairie, Texas, is the first to license the technology.

"The licensing of this analysis tool from NASA to SAGEM Avionics is another shining example of how NASA-developed technologies are transferred to the private sector to help benefit the American people," said Lisa Lockyer, chief of the Technology Partnerships Division at NASA Ames.

The tool provides airline quality assurance personnel with a list of atypical flights in an easy tabular format, highlighting the most extreme 5 percent. These may include groups of flights

experiencing an operational problem or unique situations encountered by single flights. Highlighted flights are examined by FOQA analysts to determine whether they represent operational problems.

The Morning Report tool was developed by NASA's Aviation System Monitoring and Modeling Project under the Aviation Safety and Security Program. NASA's Aeronautics Research Mission Directorate, Washington, manages the research.

For information about the Aviation Performance Measuring System and the Morning Report, visit:

http://apms.arc.nasa.gov/

For more information about NASA's Human Factors research, visit:

http://human-factors.arc.nasa.gov/

For more information about the NASA Ames Technology Partnerships Division, go to:

http://technology.arc.nasa.gov/

For information about NASA on the Internet, visit:

http://www.nasa.gov

For the related Fact Sheet, go to:

http://amesnews.arc.nasa.gov/factsheets/Chidester_apms.pdf

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